

**AMENDMENTS TO THE CLAIMS**

1. (Previously presented) A turbine burner (1) comprising
  - a secondary feed unit for the supply of a secondary or backup mixture and the discharge of said mixture from an opening (4) to a combustion zone (6) facing said opening (4) to a combustion zone (6) facing said opening (4), said secondary feed unit comprising an axial air tube (14) terminating in an axial swirler (18);
  - a primary feed unit comprising a primary mixture tube (22) and a primary mixture channel (24) intended for the supply of a primary mixture, arranged concentrically with said secondary feed unit and with said axial air tube (14), said primary mixture channel (24) having a fluid flow connection to said primary mixture tube (22),wherein said primary mixture channel (24) comprises an annular wall (28) forming, at a distance radially from the axial air tube (14), a cavity (29), and extending axially far enough to be close to the combustion zone (6), being thus capable of conveying said primary mixture directly to said combustion zone (6) facing said opening (4), directly downstream of the opening (4) of said axial swirler (18), and
- wherein the primary mixture channel (24) provides for a nozzle ring (26) having a plurality of primary mixture holes (32), passing through said ring, so as to provide fluid flow communication between the primary mixture tube (22) and the cavity (29) between the annular wall (28) of the primary mixture channel (24) and the axial air tube (14), whereby the primary mixture coming from the primary mixture tube (22) passes through said primary mixture holes (32) which impart to said primary mixture a swirling and turbulent motion along the cavity (29) until, maintaining this vigorous swirling motion, it arrives directly at the combustion zone (6) facing the outlet of the axial swirler (18) .

2. (Canceled).

3. (Canceled).

4. (Currently amended) A burner according to ~~any one of the preceding claims~~ claim 1, in which said annular wall (28) of the primary mixture channel (24) has a truncated cone-shaped end portion (30), converging in the direction of discharge of the primary mixture.

5. (Currently amended) A burner according to ~~any one of the preceding claims~~ claim 1, in which said primary mixture channel (24) comprises a nozzle ring (26) provided with primary mixture holes (32) having axes not parallel to the axis of said ring.

6. (Original) A burner according to claim 5, in which said primary mixture holes have an axis inclined by an angle (B) equal to 17°.

7. (Original) A burner according to claim 6, in which said primary mixture channel has an axial length (L) equal to 182.8 mm.

8. (Original) A burner according to claim 5, in which said primary mixture holes have an axis inclined by an angle (B) equal to 12°.

9. (Original) A burner according to claim 8, in which said primary mixture channel has an axial length (L) equal to 194.85 mm.

10. (Currently amended) A burner according to ~~any one of the preceding claims~~ claim 1, in which said secondary feed unit comprises a sleeve (11) connected to a gas-steam tube (10) intended for the supply of a secondary mixture comprising natural gas (Gn) and steam(S), said sleeve (11) comprising gas- steam holes (12).

11. (Original) A burner according to claim 10, in which said gas- steam holes are twelve in number.

12. (Original) A burner according to claim 10, in which said gas- steam holes are sixteen in number.

13. (Original) A burner according to claim 10, in which said gas- steam holes face towards a baffle (20) capable of preventing this secondary mixture from being drawn to the primary mixture channel (24).

14. (Currently amended) A burner according to ~~any one of the preceding claims~~ claim 1 in which said secondary feed unit comprises a spray nozzle (8) intended for the supply of a secondary mixture composed of gas oil(O) or gas oil and water (O+W) or intended for the supply of air (A).

15. (Currently amended) A burner according to ~~any one of the preceding claims~~ claim 1, also comprising a pilot unit comprising a plurality of pilot tubes (42) capable of supplying natural gas (Gn).

16. (Currently amended) A burner according to ~~any one of the preceding claims~~ claim 1, comprising at least one pair of igniters (44).

17. (Currently amended) A burner according to ~~any one of the preceding claims~~ claim 1, also comprising a diagonal swirler (36).